result in an order to cease and desist and to be subject to penalties as provided for in Section 21.

See attached form for additional information.

Interagency Report Control No.:

UNITED STATES DEPARTMENT OF AGRICULTURE
ANIMAL AND PLANT HEALTH INSPECTION SERVICE

ANNUAL REPORT OF RESEARCH FACILITY
(TYPE OR PRINT)

1. CERTIFICATE NUMBER: 31-R-0030
CUSTOMER NUMBER: 224

FORM APPROVED
OMB NO. 0579-0036

Kent State University
Division Of Research & Grad. Kent State University
125 Auditorium Bldg Po Box 5190
Kent, OH 44242

Telephone: (330) -672-2704

3. REPORTING FACILITY (List all locations where animals were housed or used in actual research, testing, or experimentation, or held for these purposes. Attach additional sheets if necessary)

FACILITY LOCATIONS (Sites) - See Atached Listing

REPORT OF ANIMALS USED BY OR UNDER CONTROL OF RESEARCH FACILITY (**Attach additional sheets if necessary or use APHIS Form 7023A**)

A. **Animals Covered By The Animal Welfare Regulations**	B. Number of animal being bred, conditioned, or held for use in teaching, testing, experiments, research, or surgery but not ye used for such purposes.	C. Number of animals upon which teaching, research, experiments, or tests were conducted involving no pain, distress, or use o pain-relieving drugs.	D. Number of animals upon which experiments, teaching, research, surgery, or tests were conducted involving accompanying pain or distress to the animals an for which appropriate anesthetic, analgesic, or tranquilizing drugs were used.	E. Number of animals upon which teaching, experiments, research, surgery or tests were conducted involving accompanying pain or distress to the animals and for wh the use of appropriate anesthetic, analgesic, or tranquiliz drugs would have adversely affected the procedures, res or interpretation of the teaching, research, experiments, surgery, or tests. (An explanation of the procedures producing pain or distress in these animals and the reasc such drugs were not used must be attached to this repor	F. TOTAL NUMBER OF ANIMALS (COLUMNS C + D + E)
4. Dogs					
5. Cats					
6. Guinea Pigs					
7. Hamsters	275		502	33	535
8. Rabbits					
9. Non-human Primates					
10. Sheep					
11. Pigs			6		6
12. Other Farm Animals					
13. Other Animals					

ASSURANCE STATEMENTS

1) Professionally acceptable standards governing the care, treatment, and use of animals, including appropriate use of anesthetic, analgesic, and tranquilizing drugs, prior to, during, and following actual rese teaching, testing, surgery, or experimentation were followed by this research facility.
2) Each principal investigator has considered alternatives to painful procedures.
3) This facility is adhering to the standards and regulations under the Act, and it has required that exceptions to the standards and regulations be specified and explained by the principal investigator and ap Institutional Animal Care and Use Committee (IACUC). **A summary of all such exceptions is attached to this annual report.** In addition to identifying the IACUC-approved exceptions, this summary inc brief explanation of the exceptions, as well as the species and number of animals affected.
4) The attending veterinarian for this research facility has appropriate authority to ensure the provision of adequate veterinary care and to oversee the adequacy of other aspects of animal care and use.

b6, b7c

CERTIFICATION BY HEADQUARTERS RESEARCH FACILITY OFFICIAL
(Chief Executive Officer or Legally Responsible Institutional Official)

12/14/05

SIGNATURE OF C.E.O. OR INSTITUTIONAL OFFICIAL

b6, b7c

SIGNED

APHIS FORM 7023
(AUG 91)

(Replaces VS FORM 18-23 (OCT 88), which is obsolete)

SUMMARY OF EXCEPTIONS:

The protocols listed below have cage changes slightly less frequently than normal due to the nature of the research (changed every 2 weeks). Fresh bedding is put in cages as needed on top of old bedding. Cage changing/cleaning has a dramatic phase-resetting effect on the circadian system.

177 JDG 05-05 "Neurologic Regulation of the SCN Circadian Clock"
Species: Syrian Hamsters
# of Animals Affected: Approximately 134 over the course of a year with approximately 20-30 affected at one time

147 EM 03-26 "Neurotransmitter Regulation of Circadian Rhythms"
Species: Syrian Hamsters
# of Animals Affected: Approximately 122 over the course of a year

180 EM 05-08 "Sex Differences in Circadian Rhythm Regulation"
Species: Syrian Hamsters
# of Animals Affected: Approximately 100 over the course of a year

COLUMN E EXPLANATIONS

Protocol: 180 EM 05-08
Registration #: 31-4-0030
# and Species of Animals: 33 Syrian Hamsters per year

This research project was categorized as category "E" pain level by the IACUC because it involves the euthanasia method of decapitation without anesthesia.

Description of Study: This project is designed to address the question of whether there are sex differences in the control of the body's daily biological clock. This clock is responsible for the timing of daily events, such as sleep and waking, body temperature, as well as for driving the normal cycle of reproductive hormones in females. The vast majority of research on this biological clock has been conducted exclusively using male animals. This project represents an attempt to compare daily clock function between males and females. There appear to be important differences in the timing of daily cycles depending on the state of the female reproductive cycle. This proposal examines behavioral rhythms, the location and expression level of estrogen receptors, and the effect of steroid hormones (estradiol) on daily rhythms of activity. If successful, this research will lead to a greater understanding of how female hormones influence the biological clock, and how males and females react differently to stimuli which affect the clock.

Scientific Justification: Decapitation without anesthesia is used in experiments in which gene expression levels are going to be quantitatively measured. Gene expression levels can change within seconds and can be altered by the administration of anesthetics. In these experiments, it is necessary to obtain a "snapshot" of the gene expression levels without interference from anesthesia or excessive handling of the animal. Decapitation is the most humane method for this procedure in hamsters.